The Deliberate Practice of Medicine

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Disheveled, unkempt, seems normal, wearing sunglasses, histrionic, blanket from home, 10 family members, wearing paper scrubs. Sustained attention in a patient's room can provide an enormous amount of information. The cross-sectional snapshot becomes more valuable as experience increases. An emergency room physician with 20 years of experience can capture the whole room by the time the third-year medical student confirms she is interviewing the right patient.

"Sick or not sick?" is the most frequent, important, complex, and loaded judgment we make as physicians. The art of collapsing this duality into a 5-minute initial encounter is at the heart of emergency medicine. Physicians in other specialties cultivate this skill with more depth but less breadth. The differences result from thousands of hours of training.

The radiologist scans differently, sees more in the magnetic resonance images of the spine. The dermatologist tacitly peruses a mental rolodex when examining a rash. The pulmonologist detects breath stacking on the ventilator with a glance from the hallway. The cardiologist hears the reverse splitting of S2 and observes the apical carotid delay: aortic stenosis. The psychiatrist decodes the nonverbal outcry from a voluntarily mute schizophrenic. Glazed eyes and subtle jaundice alert the astute hepatologist to liver failure. Placental abruption or intense contractions? The adept obstetrician-gynecologist estimates in seconds.

Experts who are rushed can be fooled. Who has removed a nonrebreather mask and inclined the stretcher to find a patient who no longer looks sick? Eyes closed in response to bright lighting might be normal at 4 AM. Information from a few extra moments of watching the patient generates a dynamic calculus. An average museum visitor spends 17 seconds looking at a work of art.[1] Physicians spend 8 seconds listening to patients before interrupting.[2,3] How long do we spend singularly looking at our patients, using all senses, being fully present?

As an attending physician in an academic emergency department, I have the time to truly observe—scrutinizing the patients *and* the learners. Observing the observer, I see how hastily a second-year resident makes his or her initial impression. The general impression of the physical examination should "contain sufficient succinct material to permit a stranger, should he walk through the wards, to immediately identify the patient you are describing."[4] Da Vinci spoke of the term *saper vedere*, "knowing how to see."[1] This skill is more remembered than learned. My 5-year-old twins stare with awe at a cicada shell on a tree.

Recognizing an educational opportunity, I restructured rounds in our emergency room. I allow no preliminary communication about patients whose care will be transferred. During bedside rounds, the entire group takes a deliberate, unhurried look before discussing each patient. I encourage gazing upon the patient but also around the room, noting family members (and their expressions), clothing on the chair, reading material, monitor displays, infusion pumps. The resident receiving the patient handoff must speculate—admission or discharge. With no knowledge of lab values, imaging, history, or even most of the physical examination, the resident forms his or her raw impression and is provided immediate feedback.

In a modern art museum, Dr Abraham Verghese found himself pondering the medical gaze, to "look steadily and intently, especially in admiration, surprise, or thought."[5] This demands presence with the patient, something for which we rarely allow adequate time. Verghese lamented that the patient's "data" get all of our attention. Consider Michelangelo's David: no one would settle for a detailed quantitative description of the materials, dimensions, weight, color, location, softness, and temperature when the sculpture itself is down the hall. Potentially because we have forgotten how to be present, patients also may trust lab and imaging results more than their physician's clinical assessment.[6]

Many physicians place a computer screen like a wall between themselves and their patients, sabotaging rapport. We all know the inertia felt when human interaction pulls us out of an enthralled interface with technology. This force is what makes my residents beg to have "computer rounds," so they can type notes and review results. It has become perfectly acceptable to care for a patient without actually seeing him or her.

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We varied our rounds experiment, asking the receiving resident to quickly guess the chief complaint, or even the diagnosis. I encourage all learners to actively exercise the medical gaze and to observe the patient's response to this. Does the patient brighten when the physician walks in, or has he or she formed more of a bond with the nurse? Is the patient's apathy due to a central nervous system disease, frustration, or boredom?

The main obstacle to this process is the lack of time. Often beyond the anticipated end of their shift, residents want to hand off their last 3 e-patients and go home. But this method of rounds provides residents the valuable gift of saving time. We shrink into *seconds* the period from prima facie assessment to workup complete. Contracting time on 20 patients a day for 3 years of residency adds up.

A further expansion of this educational initiative expands the number of patients observed. Throughout the shift, while actively seeing patients, I record the residents' first disposition impressions. At the end of the shift, we check accuracy. The feedback has been positive, and residents perform well. An average 10% error rate is split almost evenly between false positives (predicted admission but the patient is discharged home) and false negatives.

I originally resisted calling this a game, but it is a game, a serious one. Similar to flight simulators or military exercises, this serious game is capable of "recalibrating intuition."[7] Fewer than 10% of serious games are applied to clinicians, and only 1 published version targets heuristic training.[8] In repeatedly performing this assessment, my residents receive feedback on all patients (not just outliers), modifying future behavior.

"Purposeful practice" requires goals, intense focus, feedback, and leaving one's comfort zone.[9] The addition of a skilled coach elevates the activity to "deliberate practice," rapidly building effective mental representations.[9] Residents learn to actively seek patterns and notice what is missing. Surveillance ability increases with use, similarly to memory or muscles.

Reassessments increase accuracy. If embarked on with an open mind and no anchors, the reevaluation of a patient logarithmically increases the amount of data to coalesce into a known pattern. The motorcycle driver with road rash is now dressed and ambulating. The patient with substance abuse who was walking and talking becomes lethargic and disoriented. Delirium vacillates. Patients get sicker. Instead of reading 1 page in the narrative of a patient, we should read multiple pages.

Sir Arthur Conan Doyle learned from Dr Joseph Bell how to observe. Sir William Osler taught thousands. Intuition *is* teachable, and enjoyable to learn. With deliberate practice, physicians of all specialties can channel these medical geniuses. With an active approach, we must use feedback to instill this secret knowledge in residents.[10] An effective clinical teacher articulates what seems different about an ostensibly straightforward patient, with a granular explanation. With repeated exposure, physicians who are fully present will learn to unwrap the puzzle before them, changing and even saving lives.

References

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